

TWO NEW SPECIES OF *POMADERRIS* Labill. (RHAMNACEAE) FROM SOUTH-EASTERN AUSTRALIA

by
NEVILLE G. WALSH*

ABSTRACT

Walsh, Neville G. Two new species of *Pomaderris* Labill. (Rhamnaceae) from south-eastern Australia. *Muelleria* 7(1): 81–87 (1988). — *Pomaderris gilmourii* from New South Wales and *P. humilis* from Victoria are described as new species and notes on distribution, ecology and their relationship to other members of the genus are provided. Two varieties of *P. gilmourii* are recognised.

INTRODUCTION

The genus *Pomaderris* contains a number of species which are morphologically ill-defined and nomenclaturally confused. In the course of the preparation of a general revision of the genus, a number of apparently clearly defined, undescribed taxa have been encountered. As sufficient data pertaining to these taxa are gathered which confirm their distinctness, they will be described in order that reference to them is facilitated more quickly than would be the case if their publication were delayed until a generic revision is completed.

This is the second recent paper describing new species in *Pomaderris*. See also *Muelleria* 6: 6 (1988).

TAXONOMY

Pomaderris gilmourii N. G. Walsh, sp. nov.

Frutex ad 4 m altum. *Ramuli* glabrescentes. *Folia* obovata, oblanceolata vel anguste elliptica, 8–30 mm (raro ad 40 mm) longa, 4–13 mm lata, apice acuto ad obtusum vel rotundato, pinnatinervia, nervorum 3–5 pares, supra glabra vel pubescentia secus costae, infra tomentosa trichomatibus stellatis. *Stipulae* subulatae ad 4 mm longas, caducae. *Inflorescentiae* terminales, laxe paniculatae, pyramidales vel rotundatae, 2–5 cm diametro, aliquantum abundans. *Flores* apetalae, pedicellis 1–4 mm longis. *Sepala* oblonga, apice acuto, pagina externa pilis brevis argenteis, interne glabra. Filamenta staminum 1–1.5 mm longa. *Antherae* oblongae vel ellipticae, 0.5–1 mm longae. *Stylus* c. 1 mm longus, trilobus, divisus basi fere.

TYPUS: New South Wales — South Coast, Deua National Park, Prominence 1.9 km north from Coondella trig. point, c. 16 km WSW. from Moruya, 35° 55' 50" S., 149° 54' 20" E. Alt. 480 m, 7.xii.1987, N.G. Walsh 1889 (HOLOTYPE: MEL 1557601. ISOTYPI: BRI, CBG, HO, NSW).

Shrub to 4 m high. *Branchlets* glabrescent, but covered when young by semi-appressed to appressed simple hairs or tufted trichomes, with or without an underlying hoary layer. *Petiole* 2–8 mm long. *Lamina* obovate, oblanceolate or narrowly elliptic, 8–30 (rarely to 40) mm long, 4–13 mm wide; apex acute to obtuse or rounded; penninerved with 3–5 pairs of lateral veins which are inconspicuous above; upper surface glabrous or with a line of short hairs above the midvein; lower surface densely covered with fine stellate trichomes, with or without a superficial layer of appressed, shining simple hairs. *Stipules* subulate, to 4 mm long, soon deciduous. *Inflorescences* loosely paniculate, pyramidal or rounded, mostly 2–5 cm diam., terminal on the main axis and short lateral branches and rather prolific. Pedicels 1–4 mm long. Sepals oblong, acute at apex, covered with short silver-grey hairs externally, glabrous and cream-coloured on the inner face. *Petals* absent. *Stamens* alternating with sepals; filament 1–1.5 mm long; anther c. 0.5–1 mm long. *Ovary*

*National Herbarium of Victoria, Birdwood Avenue, South Yarra, Victoria, Australia 3141.

inferior, trilocular, the summit densely covered by erect simple hairs. *Style* c. 1 mm long, divided almost to the base into 3 spreading arms. *Capsules* not seen.

Although the species is known from only a few collections, specimens can be readily segregated into two entities. These are here described as varieties although future collections of the species may indicate that a reassessment of the taxonomic rank of the two entities is warranted.

KEY TO THE VARIETIES OF *POMADERRIS GILMOURII*

1. Indumentum of leaf undersurfaces, petioles, branchlets etc. with a dense superficial layer of appressed simple hairs, imparting a shining appearance to those surfaces; leaf margins thickened and glabrous, apparent as a distinct border on undersurface. Sepals c. 1.5 mm long var. *gilmourii*
1. Indumentum not including a dense superficial layer or appressed simple hairs, surfaces appearing dull; leaf margins neither thickened or glabrous, not apparent as a border on either surface. Sepals c. 1 mm long var. *cana*

P. gilmourii N. G. Walsh var. *gilmourii*

Folia incrassata margine vel recurvata, supra glabrum omnino, infra cum pilis adpressis sericeis nitentibus. *Sepala* c. 1.5 mm longa. *Antherae* oblongae c. 1 mm longae. *Stylus* sparsim pubescens infra divisuram.

Leaves with margins thickened or minutely recurved, appearing bordered from beneath; undersurface with fine stellate trichomes overlain by appressed, shining, silky, simple hairs; upper surface quite glabrous. *Sepals* c. 1.5 mm long. *Anthers* oblong c. 1 mm long. *Style* sparsely pubescent below point of division, glabrous above. (Fig. 1, a-d).

OTHER SPECIMENS EXAMINED (Total examined, 7):

New South Wales — South Coast: Deua National Park, c. 6 km N. of 'Bendethra', 35° 54' S., 149° 43' E. Alt. 700 m, 28.iii.1985, *P. Gilmour* 4988 (MEL 681685 and 671106, Dupl. CBG 8505373). South Coast: Deua National Park, c. 2 km N. of Coondella trig., 35° 56' S., 149° 54' E. Alt. 450 m, 25.xi.1985, *P. Gilmour* 5333 (MEL 681668, Dupl. CBG 8505382). Deua National Park, near Mt Donovan, AMG 8826-624291. Alt. 540 m, 28.iii.1985, *P. Beesley* 376 & *D. Binns* (MEL 672076). From type locality, 7.xii.1987, *N.G. Walsh* 1877 and 1890 (MEL 1557604 and 1557609 respectively).

P. gilmourii var. *cana* N. G. Walsh var. nov.

Folia plano margine, supra pubescentia secus costae. *Sepala* c. 1 mm longa. *Antherae* ellipticae, c. 0.5 mm longae. *Stylus* pubescens ultra divisuram.

TYPUS: New South Wales — South Coast, Deua National Park. Prominence 1.9 km north from Coondella trig. point, c. 16 km WSW. from Moruya, 35° 55' 50" S., 149° 54' 20" E. Alt. 480 m, 7.xii.1987, *N.G. Walsh* 1876 (HOLOTYPE: MEL 1557595). **ISOTYPE:** BRI, CBG, HO, K, NSW).

Leaves with plane margins, not appearing bordered from beneath; tomentum of lower surface of stellate trichomes only, or if a few simple hairs present, then these neither appressed nor shining; upper surface minutely pubescent above the midvein. *Sepals* c. 1 mm long. *Anthers* elliptic c. 0.5 mm long. *Style* pubescent beyond the point of division. (Fig. 1, e-g).

OTHER SPECIMENS EXAMINED (Total examined, 2):

New South Wales — South Coast: Deua National Park, c. 2 km N. of Coondella trig., 35° 56' S., 149° 54' E. Alt. 450 m, 25.xi.1985, *P. Gilmour* 5327 (MEL 684706, 681669, Dupl. CBG 8505378).

DISTRIBUTION AND CONSERVATION STATUS:

P. gilmourii var. *gilmourii* is currently known only from Deua National Park and its immediate environs, within an area of only about 15 km diameter. The land system supporting *P. gilmourii* is poorly known however and further populations may be



Fig. 1. *Pomaderris gilmourii* var. *gilmourii*. a — branchlet in bud and flower, $\times 1$. b — undersurface of leaf $\times 3$; inset $\times 9$. c — flower $\times 8$. d — style $\times 12$. *P. gilmourii* var. *cana*. e — undersurface of leaf $\times 3$; inset $\times 9$. f — flower $\times 8$. g — style $\times 12$. a-d drawn from *N.G. Walsh 1889* (type); e-g drawn from *N.G. Walsh 1876* (type).

expected to be discovered in the course of detailed survey of the general area. *P. gilmourii* var. *cana* is known only from a few plants at the type locality where it occurs with the typical variety. The species conservation status has been assessed as 2RC-t (Briggs & Leigh 1988), that is the species is rare ('R'), represented within a conservation reserve ('C'), the population size is unknown ('-'), but all known plants are reserved ('t').

HABITAT:

P. gilmourii occurs on skeletal soils derived from rhyolite, an igneous rock, in this area formed as part of the Comerong Volcanic series (Gilligan 1974). Most sites are exposed, on or atop steeply sloping rock faces supporting shrubland or open woodland, although one collection (*Gilmour 4988*) is apparently from a more sheltered site supporting open forest. Recorded altitudes range from 450 m to 700 m. Associated species typically include a number of similarly localised, rhyolite-endemic species such as the recently described *Prostanthera porcata*, *Westringia saxicola* and an undescribed *Leptospermum* as well as other species characteristic of clifftop shrubland and woodland communities, e.g. *Eriostemon trachyphyllus*, *Platysace lanceolata*, *Hakea dactyloides*, *H. macreana*, *Kunzea ambigua* and *Eucalyptus stenostoma*.

NOTES:

P. gilmourii is a very distinctive species unlikely to be confused with any other *Pomaderris* in the eastern states. However, sterile specimens somewhat resemble *P. myrtilloides*, a species of calcareous, mostly coastal sites in southern Western Australia and it was to this species which I very hesitantly referred the first (sterile) material of *P. gilmourii* I saw. Unlike *P. gilmourii* though, the western species is not apetalous and has a style which is barely cleft. The indumentum of *P. gilmourii* var. *gilmourii* is suggestive of that of *P. ledifolia*, a species also typically associated with exposed, rocky peaks, but the characteristic very narrow leaves and crowded, petalous flowers of that species readily distinguish it from *P. gilmourii*. *P. cinerea*, a species endemic to the south coast region of New South Wales and which also occurs within Deua National Park shares with *P. gilmourii* a number of features which may indicate a closer relationship than the general appearance of the two species suggests. Both species flower later in the year than any other *Pomaderris* in the broad area, both are apetalous and perhaps most significantly, both species have a pubescent style, a feature not known from other members of the genus. The general nature of the indumentum of *P. cinerea* and its overall dusky appearance are reflected to some extent in *P. gilmourii* var. *cana*.

The specific epithet honours Mr Phil. Gilmour, formerly of Canberra, who first collected this species and whose collections comprise the majority of herbarium specimens of it. His botanical surveys of the largely unexplored south coast area of New South Wales in general and the rugged and largely inaccessible rhyolite country in particular, have unearthed a number of new species and improved our knowledge of many rare and restricted plants.

The varietal epithet *cana* refers to the dull, greyish appearance of that variety, in contrast to the brighter overall aspect of the typical variety.

Pomaderris humilis N. G. Walsh, sp. nov.

Frutex decumbens vel infirme ascendens, plerumque ad 0.5 m altum. *Ramuli* stellato-tomentosi cum pilis simplicibus vel trichomatibus caespitosis longioribus. *Folia* elliptica vel ovata raro obovata, 10–50 mm longa, 7–25 mm lata, apice rotundato versus late acutum, pinnatinervia, nervorum 5–7 pares, supra pilosa cum pilis simplicibus suberectis raro cum stellatis vel bifidis trichomatibus paucibus, c. 0.2 mm longis, infra stellato-tomentosa cum pilis simplicibus longioribus praesertim in costis et nervis. *Stipulae* lanceolatae, ad 4 mm longas, caducae. *Inflorescentia* terminales, paniculatae, pyramidales plerumque 3–5 cm diametro. *Sepala* oblonga, 2–2.5 mm longa, apice acuto, pagina externa stellato-tomentosa cum pilis simplicibus longioribus, interne glabra. *Petala* spathulata, breviora parum sepalis, margine apicali irregulatum crenato. *Filamenta* staminum 2–2.5 mm longa. *Antherae* oblongae, c. 1 mm longae. *Stylus* 1.5–2 mm longus, integer fere vel divisus $\frac{1}{2}$ parte sui longitudinis. *Capsulae* ovoideae, c. 3.5 × 2.5 mm.

TYPUS: Victoria — Gippsland, Holey Plains State Park, Holey Hill, beside 'Banksia Forest' walk, 0.3 km WNW. from fire tower on summit, 14 km south-east from Rosedale, 38° 13' S., 146° 57' E. Alt. c. 170 m, 1.x.1986, *N.G. Walsh 1616* (HOLOTYPE: MEL 1556333. ISOTYPE: CANB, HO).

Decumbent or weakly ascending shrub, mostly to c. 0.5 m high, rarely to 1.6 m high. *Branchlets* and petioles closely stellate-tomentose with an overlying layer of longer, simple hairs or tufted trichomes. *Lamina* elliptic or ovate, rarely obovate, 10–50 mm long, 7–25 mm wide; apex rounded to broadly acute; penninerved with 5–7 pairs of lateral veins; upper surface pilose with erect or slightly antrorsely inclined simple hairs c. 0.2 mm long, rarely also with a few bifid or stellate trichomes; lower surface pale, with a dense mat of minute stellate trichomes and some longer (c. 0.5 mm) simple hairs, those of the midrib and lateral veins longer (to 1 mm) and more numerous. *Stipules* lanceolate, to 5 mm long, soon deciduous. *Inflorescences* paniculate, pyramidal, mostly 3–5 cm diam., terminal. *Pedicels* 2–3 mm long. *Sepals* spreading, oblong, 2–2.5 mm long, acute at apex, covered externally with a dense stellate tomentum with longer simple hairs, these dense on the thalamus tube; inner face creamy yellow, glabrous. *Petals* erect, pale yellow, spatulate, slightly shorter than sepals, the apical margin irregularly crenate. Stamens opposite the petals; filament 2–2.5 mm long; anther oblong, c. 1 mm long. *Ovary* inferior, trilocular, the summit densely covered by erect hairs. *Style* 1.5–2 mm long, almost entire or divided in the upper one-third into three spreading arms. *Capsules* ovoid, c. 3.5 × 2.5 mm. *Seeds* elliptic, dorsally rounded, c. 2.5 × 1.5 mm. (Fig. 2).

OTHER SPECIMENS EXAMINED (Total examined, 6):

Victoria — from type locality: 2.ix.1949, *J.D. Sherwood s.n.* (MEL 55064); 6.iii.1973, *A.C. Beaglehole 41615* (MEL 517247, Dupl. NSW); 28.ix.1974, *J.H. Willis s.n.* (MEL 91867); 14.vi.1986, *N.G. Walsh 1602* (MEL 1549453, Dupl. NSW, HO); Gippsland, Rosedale, Cheshum Rd, c. 8 miles south of town, off Limepit Rd, 18.x.1969, *B. Thompson s.n.* (MEL 504689).

DISTRIBUTION AND CONSERVATION STATUS:

Known with certainty only from the type area, the population there consisting of an estimated 2000–5000 plants. A specimen in early bud [*Beaglehole 37541* (MEL 517249, Dupl. NSW)] from near Bruthen (c. 100 km ENE. from the type locality), may be *P. humilis* but the buds are insufficiently developed for a confident assignation of the specimen. Surveys of the area during the 1986 and 1987 flowering seasons failed to locate plants matching the Beaglehole (37541) specimen. Both the Bruthen site and Holey Hill are formed on late Tertiary marine sediments (Geological Survey of Victoria 1971, 1977). Local edaphic and general conditions in the two areas are very similar and the two sites have many species in common.

The conservation status of *P. humilis* has been assessed as 2RCat (Briggs & Leigh 1988), that is the species is rare, represented in a conservation reserve, the population exceeds 1000 individuals (a) and the total population occurs in a conservation reserve. A number of plants of *P. humilis* at the northern fringe of the population were apparently removed in the early 1970s in a clearing operation to make way for a *Pinus radiata* plantation (Mrs B. Thompson, South Traralgon, pers. comm.).

HABITAT:

P. humilis occurs on coarse, sandy soil derived from late Tertiary marine deposits. The vegetation type is a *Eucalyptus consideniiana*-*E. globoidea* open forest with a tall shrub layer dominated by *Banksia serrata* and a heathy low shrub and ground layer including *Brachyloma daphnoides*, *Monotoca scoparia*, *Banksia marginata*, *Grevillea chrysoptera* and *Lepidosperma concavum*.

NOTES:

Pomaderris humilis has in the past (e.g. Beaglehole 1980) been referred to *P. aff. velutina*. It bears a superficial resemblance to *P. velutina* J. H. Willis in the somewhat velvety upper surfaces of the leaves, but the hairs on the upper surfaces of the leaves of



Fig. 2. *Pomaderris humilis*. a — flowering branchlet $\times 1$. b — stipules and leaf base $\times 4$. c — upper surface of leaf $\times 10$. d — lower surface of leaf $\times 10$; flower $\times 6$. a, c, d and e drawn from the holotype; b drawn from *Beaglehole* 41615 (MEL 517247).

P. humilis differ in being predominantly simple and substantially longer and sparser. Furthermore *P. velutina* has few, thread-like simple hairs confined to the midrib and larger veins on the undersurfaces of the leaves and flowers with relatively broad petals and deeply trifid styles, whereas *P. humilis* has copious simple hairs on both the veins and internerves of the lower leaf surface, and flowers with narrow petals and shallowly cleft styles.

P. humilis is probably more closely allied to *P. aurea* Wakefield and the widespread *P. lanigera* (Andrews) Sims. From the former it differs conspicuously in the simple pubescence of the upper leaf surface and narrow petals and from *P. lanigera* in the finer tomentum on the upper surface of the leaves, the sparser, less spreading pubescence beneath, the narrow petals, shallowly cleft style and the relatively small, pyramidal inflorescence (*P. lanigera* characteristically has a broad, hemispherical or flat-topped inflorescence).

From virtually all eastern state *Pomaderris* species, *P. humilis* is distinguished by its largely decumbent growth habit, whence the specific epithet is derived. This growth habit has been maintained in cultivated plants growing in East Malvern (Victoria) for more than two years. Occasional wild-growing plants occurring amongst dense vegetation may attain 1.6 m in height but this growth is usually rather spindly. The growth habit of the plant near Bruthen from which *Beaglehole 37541* was collected is unknown.

P. humilis is the taxon referred to as '*Pomaderris* sp. (Holey Hill)' in Forbes and Ross (1988).

ACKNOWLEDGEMENTS

I wish to thank Mr Phil Gilmour for his efforts in procuring specimens of *P. gilmourii* on my behalf; Jan, Kate and Rick Walsh for their cheerful company in the field; Mrs Bon Thompson of Traralgon South for information pertaining to *P. humilis*; and my colleague, Miss Anita Podwyszynski who prepared the illustrations.

REFERENCES

- Beaglehole, A. C. (1980). 'Victorian Vascular Plant Checklists'. (Western Victorian Field Naturalists Clubs Association: Portland.)
- Briggs, J. D. & Leigh, J. H. (1988). Rare or threatened Australian plants: The 1988 revised edition. Austral. Natl Parkes & Wildlife Serv. Special Publ. 14.
- Forbes, S. J. & Ross, J. H. (1988). 'A census of the vascular plants of Victoria. Second edition'. (National Herbarium of Victoria: Melbourne.)
- Geological Survey of Victoria (1971 and 1977). Australia 1:250,000 geological map series, Warragul and Bairnsdale, sheets SJ55-10 and SJ55-7 respectively. (Govt. Printer: Melbourne.)
- Gilligan, L. B. (1974). Canberra 1:250,000 metallogenic map. SI-55-16. Geol. Surv. N.S.W., Sydney.

